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Ratesetting

TO PARTIES OF RECORD IN RULEMAKING 07-09-008

This is the proposed decision of Commissioner Michael R. Peevey. It will not appear on the Commission's agenda for at least 30 days after the date it is mailed. The Commission may act then, or it may postpone action until later.

When the Commission acts on the proposed decision, it may adopt all or part of it as written, amend or modify it, or set it aside and prepare its own decision. Only when the Commission acts does the decision become binding on the parties.

Parties to the proceeding may file comments on the proposed decision as provided in Article 14 of the Commission's Rules of Practice and Procedure (Rules), accessible on the Commission's website at www.cpuc.ca.gov. Pursuant to Rule 14.3, opening comments shall not exceed 15 pages.

Comments must be filed either electronically pursuant to Resolution ALJ-188 or with the Commission's Docket Office. Comments should be served on parties to this proceeding in accordance with Rules 1.9 and 1.10. Electronic and hard copies of comments should be sent to ALJ Carol Brown at cab@cpuc.ca.gov and Commissioner Peevey's advisor Jackson Stoddard at fjs@cpuc.ca.gov. The current service list for this proceeding is available on the Commission's website at www.cpuc.ca.gov.

/s/ ANGELA K. MINKIN
Angela K. Minkin, Chief
Administrative Law Judge

ANG:rbg

Attachment

Decision **PROPOSED DECISION OF COMMISSIONER PEEVEY**
(Mailed 2/11/2008)

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to establish the California Institute for Climate Solutions.	Rulemaking 07-09-008 (Filed September 20, 2007)

DRAFT PROPOSED DECISION ESTABLISHING CALIFORNIA INSTITUTE FOR CLIMATE SOLUTIONS

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DRAFT PROPOSED DECISION ESTABLISHING CALIFORNIA INSTITUTE FOR CLIMATE SOLUTIONS

1. Summary

Confronting climate change is the preeminent environmental challenge of our time. As we noted in the OIR, stabilizing GHG emissions will require an economic and technological transformation on a scale equivalent to the Industrial Revolution.[1] This decision, by creating the California Institute for Climate Solutions, (CICS or Institute) adopts a bold and innovative approach to expanding California's leadership on this most pressing of environmental issues. The Institute will provide significant benefit to ratepayers by accelerating applied research and development (R&D) of practical and commercially viable technologies that will reduce greenhouse gas emissions (GHG) in order to slow global warming, as well as technologies that will allow California to adapt to those impacts of climate change that may now be inevitable. The Institute will have a particular focus on speeding the transfer of these technologies from the laboratory to market place. The Institute will also fund programs that will help the state fill the "green workforce pipeline" in order to ensure that the state can meet its aggressive GHG reduction goals.

The funding for the CICS, approved in today's decision, is an investment in California's future. The framework described below will leverage the State's considerable intellectual capital for the purpose of accomplishing the following mission:

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[1] Eileen Claussen, *Technology and Climate Change: Sparking a New Industrial Revolution* (March 10, 2002), http://www.pewclimate.org/press_room/speech_transcripts/transcript_technolog.cfm

(1) To administer grants to facilitate mission-oriented, applied and directed research that results in practical technological solutions and policy recommendations likely to reduce GHG emissions or otherwise mitigate the impacts of climate change in California.

(2) To speed the transfer, deployment, and commercialization of technologies that have the potential to reduce GHG emissions or otherwise mitigate the impacts of climate change in California.

(3) To disseminate climate change related knowledge and skills to California's students and workforce in order to promote the kinds of behavior and foster the kinds of technological expertise that can help California achieve its GHG reduction goals.

These three pillars of the Institute's mission will be supported by the formation of new channels of communication between academics, utilities, policy-makers, investors, and the public.

In order to provide direction to the Institute's mission, maximize ratepayer benefit, and minimize unnecessary redundancy, the Institute shall first develop a Climate Solutions Roadmap (Roadmap) that will identify those areas of research and technological innovation that are most likely to achieve the greatest GHG reductions at lowest cost. The Roadmap will be the framework from which the Institute will develop strategic plans and administer grants. The Roadmapping and strategic planning processes are structured in a way to maximize ratepayer benefit and cost-effectiveness.

The Institute will fund mission-oriented applied research with an emphasis on the development and rapid transfer of the knowledge gained to the electric and gas sectors for implementation. The Institute will reduce GHG emissions within the state both by transferring technology for clean energy and better energy efficiency that has already been developed and by developing new commercially viable technology.

In order to maximize the intellectual resources available within the State, the Institute will work collaboratively with California's academic institutions, including the University of California (UC), the California State University and Community College systems (CSU/CC), Stanford University (Stanford), the California Institute of Technology (CalTech), the University of Southern California (USC) as well as California's national research laboratories: Lawrence Berkeley National Laboratory, Lawrence Livermore National Laboratory, Sandia National Laboratory, the Jet Propulsion Laboratory, and the National Aeronautics & Space Administration Ames Research Center (National Laboratories). In addition to developing and commercializing new technologies through the CICS grant process, these institutions will serve as the conduits through which the CICS will disseminate knowledge and implement strategies for developing a workforce prepared to participate in a carbon-constrained economy.

The location of the hub or headquarters of the Institute will be determined through a competitive, peer-reviewed process.

Finally, in today's decision we take care to ensure that the Institute will remain accountable to the Commission and the ratepayers. This decision is not a contract and may be modified by the Commission at any time. The auditing and reporting requirements, the presence of two Commissioners and the Director of the Division of Ratepayer Advocates on the Institute's Governing Board, and the Commission's ongoing oversight authority will ensure accountability and promote communication between the ratepayers, the Commission, and the Institute's staff.

The Institute Charter, the Governing Board Conflict of Interest Policy, and the Governing Board composition chart are attached to this decision in Appedices A-D.

2. Background

On September 20, 2007, the Commission issued an Order Instituting Rulemaking (OIR) as part of its continuing effort to aggressively pursue creative and cost effective ways to reduce GHG emissions within California. The OIR included a proposal from UC to establish the CICS, hosted at UC, funded by ratepayers at a proposed level of $60 million per year for 10 years, dedicated to supporting California's research institutions in initiating targeted research, education and training projects throughout the state. The OIR established that the proceeding would focus on the appropriate governance structure for the institute, on priorities for research and technology development that would benefit utility ratepayers by reducing GHG emissions and on establishing a funding mechanism for the institute.

The OIR invited parties to comment on UC's proposal. The California Council on Science and Technology (CCST), California Farm Bureau Federation (CFBF), CSU, CalTech, the Community Environmental Council (Environmental Council), Consumer Federation of California (CFC), Division of Ratepayer Advocates (DRA), the Energy Producers and Users Coalition (EPUC), the Indicated Producers (IP) and the Western States Petroleum Association (WSPA), Environmental Defense, Greenlining Institute (Greenlining); Independent Energy Producers (IEP); Morrison and Foerster, LLP (Morrison and Foerster), Natural Resources Defense Council (NRDC), PacifiCorp; Pacific Gas and Electric Company (PG&E); Southern California Edison Company (SCE), San Diego Gas & Electric Company and Southern California Gas Company (SDG&E/SoCalGas)

Southern California Generation Coalition (SCGC), Stanford, USC, the Utility Reform Network (TURN); and UC filed comments on the proposal in the OIR. UC's comments included a refined proposal that incorporated many changes in response to questions and concerns that parties raised in response to the initial UC proposal. Alliance for Retail Energy Markets (AReM), CCST, CalTech, DRA, Greenlining, IEP, Merced Irrigation District and Modesto Irrigation District (MID/MID), Morrison and Foerster, NRDC, PacifiCorp, PG&E, SCE, SDG&E/SoCalGas, Stanford, USC, and UC filed response comments.

A workshop was held on December 12, 2007 and presentations were made by numerous stakeholders, including UC, Stanford, USC, CSU/CC, the California Institute for Energy and the Environment, the Commission's Energy Division (ED), PG&E and SCE, other state agency programs, including the Public Interest Energy Research (PIER) Program under the California Energy Commission (CEC) and the California Air Resources Board (CARB), environmental groups, including NRDC, and ratepayer and consumer groups. Post-workshop comments were received from SDG&E/SoCalGas, MID/MID, NRDC, DRA, Greenlining and the Community Environmental Council.

We greatly value the input and comments received by all parties. Opening, reply, and workshop comments are summarized and attached in Appendix D.

3. The California Institute for Climate Solutions

3.1. Need

In the OIR we asked parties to comment on whether there was a need for the kinds of research and educational programs outlined in the original UC proposal and whether there was a need for the scale of research contemplated by the $60 million per year funding proposal.

NRDC illustrates in its Opening Comments that public investment in energy R&D nationally has been declining for decades. Public interest energy R&D in California hit a high of $150 million in 1991, declined to $63 million in 1994, and, thanks to system benefits charge contributions to the PIER program, has only recently risen back up to its previous levels. Unfortunately, the $62.5 million approved for the PIER program is scheduled to sunset in 2011, at which point public funding of energy R&D may return to its 1994 level.

Both NRDC and the Community Environmental Council argue that, at least on a national scale, a five to ten fold increase in spending on energy and climate-related R&D may be needed to meet the problems of climate change and that such investment would be repaid in technological innovation, business opportunities, and job growth.[2]

SDG&E/SoCalGas contend that while there is a great deal being spent on climate-related research, there is little being done to bridge the "gap between the scientific frontier and practical technology." Similarly, Morrison and Foerster argue that there is a greater need for an organization, such as the CICS, that can evaluate climate change issues from a broader perspective than a pure grant-making body.

Several parties, including EPUC/IP/WSPA, maintain that while climate change is clearly an important issue, California is already spending a great deal on it and the Commission should first conduct an inventory of current state spending on climate change related research so as to avoid funding redundant programs. CFC, among others, identifies the PIER as a program that is already

[2] Daniel M. Kammen, Gregory F. Nemet, "Real Numbers" (Oct. 9, 2005). Issues in Science and Technology. The University of Texas at Dallas.

doing much of what the proposed Institute would do and that it would, therefore, interfere with the coordination of state policy. Other programs and research efforts that may overlap with some the Institute's functions are Helios, the Energy Biosciences Institute (EBI) and the Commission's proposed Emerging Renewable Resource Program (ERRP).

The Commission is mindful that redundancy in research could result in unnecessary ratepayer and taxpayer expenditures. To ensure that this does not occur, we have as the first priority of the Institute the development of a Roadmap that will begin with an inventory of publicly-funded climate change-related research and education efforts. When the inventory is complete, it should be submitted to the Commission's Executive Director as a status report. This inventory, which should be informed by the inventory prepared in response to a motion filed in this proceeding by Joint Parties, should ensure that there is no duplication of efforts or unnecessary expenditure of ratepayer or public funds.[3] Furthermore, the process of creating an inventory will promote efficiency and facilitate coordination and cooperation among agencies, academic institutions and the private sector.

Other parties indicate that there are specific areas of need that the Institute will be well positioned to address, such as: energy storage, the development of "second generation" energy efficiency and renewable technologies in the electric

[3] On December 11, 2007, California Large Energy Consumers Association, The Utility Reform Network, EPUC/IP/WSPA and California Manufacturers & Technology Association (Joint Parties) filed a Motion, in this proceeding as well as R.06-04-009 and Application 07-08-031, for an Inventory of all Utility Ratepayer Funded Programs and all GHG Reduction Programs for the Electricity and Natural Gas Sectors. In response to

Footnote continued on next page

and natural gas sectors, smart technologies in the distribution and transmission of electricity and gas, and strategies for mitigating the physical impacts of climate change on California ratepayers. While these may all indeed be areas of great need, the Commission cannot determine at this time whether they are a better and more cost-effective investment of ratepayer funding than other possible areas of research. Accordingly, we do not, in this decision, prescribe any specific areas of research. Instead we require that the Institute engage in a comprehensive Roadmapping process prior to funding any grants in order to identify what areas of study can achieve the greatest reductions at the lowest cost and to the greatest ratepayer benefit.

Several parties, again arguing that similar research is occurring elsewhere in the state, question whether and how ratepayers will benefit from funding research and development of the kinds of technologies described in the UC proposal. CFC argues that "Californians don't need higher utility bills".[4] Whether and how ratepayers will benefit from the work of the proposed Institute is closely related to the question of need.

The State of California has aggressive goals to reduce GHG emissions in the coming years. While the specific source of these reductions and how they will be achieved is far from certain, what is certain is that the electricity sector, which accounts for roughly one-third of all GHGs released within California each year, will play a central role in meeting targeted reductions. It is not possible to precisely predict what technologies Institute-funded research will

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that motion, the Commission is directing parties in the 2008 LTPP OIR, the umbrella proceeding for procurement related issues, to produce such an inventory.

[4] CFC, Corrected Comments, p. 2.

yield, or the economic benefits of the Institute's contribution to the training of a new generation of greentech workers. Given these uncertainties, any effort to calculate the total monetary benefits, much less the portion of those benefits flowing to California ratepayers would be highly speculative. However, we believe, as the Stern Review [5] indicates, that the benefits of early action on climate change are likely to outweigh the cost of delaying action.

While it is difficult to quantify the benefits that the CICS will provide to California ratepayers, we can identify the likely sources of those benefits:

1. Technologies that improve efficiency in generating and using electricity and natural gas will provide a direct benefit to California ratepayers by reducing their utility costs.
2. Given the high likelihood of a multi-sector state-wide, regional or national cap-and-trade program for GHGs, even technologies that contribute to cost-effective GHG reductions in other sectors of the economy will help to relieve demand for GHG allowances and thereby contribute to lower allowance costs for the consumption of electricity and natural gas.
3. To the extent that the CICS produces technologies that contribute to reductions of GHG emissions in California or elsewhere, California ratepayers will benefit from mitigation of the real costs of climate change: damage to California's forests, increasing rate of extinction, loss of coastline due to rising sea levels, reduction in the Sierra snowpack, impacts of changing meteorological patterns on agricultural productivity, and increasing incidence of severe weather events.

Again, precisely quantifying these benefits is difficult and necessarily speculative. There is, however, convincing evidence that increased R&D in the

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[5] *Stern Review on the Economics of Climate Change*, 2006. HM Treasury, United Kingdom. http://www.hm-treasury.gov.uk/independent_reviews/stern_review_economics_climate_change/sternreview_index.cfm.

energy sector saves ratepayers' money. Looking to data from other ratepayer-funded investments in R&D, such as a 1998 to 2003 review of the electric and natural gas Public Interest Energy Research (PIER) program, "[ratepayer] benefits from these investments are projected to be between $1.60 and $4.10 for every dollar contributed." [6] Preceding PIER, the utilities' investments in R&D via the Electric Power Research Institute (EPRI) also provided demonstrated return on investment to ratepayers. [7] By another estimate, "investments in cost-effective energy efficiency have delivered more than $5.3 billion in net benefits to billpayers over the last decade alone."[8] Since we cannot know what specific kinds of research will be conducted until after the roadmapping process has been completed, we cannot precisely determine the potential return for ratepayers at this time. Cost-effectiveness and potential return to ratepayers should be a factor at the strategic planning stage.

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[6] NRDC Opening Comment at 9, citing *2004 Annual Review of the PIER Program Volume 1 - Commercial Successes and Benefits*, publication #CEC-500-2005-055-V1. March 2005 at p. 3.

[7] *See* NRDC Opening Comments at 9-10: "A 1994 report by PG&E on the value of its billpayers funded membership in EPRI showed that over the 1986-1993 period the benefit-to-cost ratio for billpayers was 6 to 1. When the anticipated benefits and costs for the period 1994-1998 were added to the 1986-1993 data, the resulting overall ratio was 5 to 1 for the 13 year period. An SCE study showed similar results. The high-benefit/cost results indicated that, in general, utility research money was well spent, but the high benefits also suggested to some that there were more potentially high-benefit projects that were not undertaken." (citing *Working Group Report on Public Interest Research, Development and Demonstration Activities*. Submitted to the CPUC September 6, 1996 in R.94-04-031. pp 3-7.)

[8] NRDC Opening Comment at 9, citing *Audrey Chang, California's Sustainable Energy Policies Provide a Model for the Nation, NRDC*, Nov. 2006 p. 3

Ratepayer benefit, in terms of dollar-for-dollar return on investment, will only be bolstered by the Institute's commitment to collect additional funding from private sources. These matching funds will stretch the value of each ratepayer dollar contributed. Narrowly defining the scope of potential research would likely hurt the ability of the institute to attract non-ratepayer funding and, therefore, limit the potential return.

3.1.1. The CICS Mission will Help California Achieve the Goals Established in AB 32

The mission of the CICS is consistent with the purpose and findings contained in Assembly Bill (AB) 32, The Global Warming Solutions Act of 2006.[9] In AB 32, the Legislature found that global warming "poses a serious threat to the economic well-being, public health, natural resources, and the environment of California." (Section 38501(a).) The Legislature also found that global warming would have a particular impact on the electricity sector by increasing "the strain on electricity supplies necessary to meet the demand for summer air-conditioning in the hottest parts of the state" while at the same time decreasing the "supply of water to the state from the Sierra snowpack." Investing in the development of innovative and pioneering technologies, the Legislature found, will assist California in achieving its GHG emission reduction goals and "will also help position its economy and businesses to benefit from future national and international efforts to reduce GHG emissions efforts world wide." (Section 38501(e).)

[9] AB 32 (Stats. 2006, Ch. 488, effective September 27, 2006), codified in Division 24.5 of the Health and Safety Code.

3.2. Budget and Funding

The OIR asked parties to comment on a number of issues, including whether the proposed budget was reasonable and a how the budget should be funded. Parties' comments on budget and funding can be organized into four separate issues:

1) Who should pay for the work of the proposed Institute?
2) What is the appropriate level of funding?
3) How should the costs be assessed?
4) How should the budget be allocated among the functions and tasks of the Institute?

The answer to each question informs the next. We will address each question in order taking into consideration the comments submitted.

3.2.1. Funding

Who should pay for the work of the proposed Institute?

The OIR proposed that CICS be funded by ratepayers. The generation and consumption of electricity and natural gas are significant contributors to the climate change problem. Parties' comments ranged from strong support for ratepayer funding by NRDC to strong opposition from DRA and CFC. NRDC supports the proposed budget and funding, but recommends that the scope of research be narrowed to ensure that the costs born by ratepayers are used to fund research related to electricity and natural gas. Many parties echoed NRDC's comments supporting the proposed budget and funding mechanism as adequate and appropriate to the task, but recommended narrowing the scope of the research to ensure that the costs borne by ratepayers are used to fund relevant and appropriate activities.

In addition, NRDC justifies the ratepayer funding by arguing that even though California rates are high, energy bills are comparable or even low compared to similar states like Florida and Texas. Finally, they contend that ratepayer funded investments, such as the proposed CICS, do in fact provide proven returns, as discussed above.[10]

UC, CSU and the private research institutions declined to comment on the appropriateness of ratepayer funding, but did make the argument that benefits could and would flow to the ratepayers as a result of the proposed activities, particularly with the narrowed focus offered in UC's revised proposal.

On the other hand, numerous parties shared DRA's concern that "[d]espite broad support for CICS among the parties, no one has provided sufficient justification for ratepayer funding," and "[t]here is, at best, a limited connection between IOU ratepayers and the obligation to fund the wide scope of the Institute's activities."[11] Other parties observe that since climate change is a global problem with global impacts, the benefits of the Institute will fall to a far broader population of beneficiaries than just IOU ratepayers.[12] TURN, IEP, Greenlining, and Community Environmental Council all argued the scope of the CICS is broad enough that it should be funded "through legislative action and that public funding should be provided through taxes, rather than enacted by the CPUC and funded by ratepayers."[13] Ratepayers, they argue, are already overburdened by public programs and should not bear this cost alone.

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[10] NRDC, Reply Comments, p. 9.

[11] DRA, Reply Comments, pp. 3-4.

[12] IEP, Opening Comments, p. 12.

[13] TURN, Opening Comments, pp. 2-3.

In addition to a arguing that a tax would be more appropriate than a rate surcharge, parties, including TURN, Greenlining, CEC and DRA, maintain that utility shareholders should bear a portion of the costs. The utilities, including PG&E, SCE, SDG&E/SOCALGAS, and PacifiCorp all reject that proposal, but echo the concern that their customers not bear an undue portion of the costs. PG&E also proposes including California's publicly-owned utilities (POUs) in both the funding and participation in the CICS programs. They note that one-third of California's consumers and businesses are served by POUs.[14]

While DRA objects to ratepayer funding for the Institute, DRA does offer constructive suggestions for protecting ratepayer monies if the Commission does go forward. DRA proposes that any funding approved by the Commission should be limited to initial seed funding and that private donors should provide the balance of funding going forward. DRA further suggests that the Commission should limit ratepayer funding to technology and policy research and should prohibit the use of ratepayer funds for administrative expenses.[15]

Greenlining contends that since ratepayer money is drawn from all segments of society, the Commission must ensure that the benefits are realized by all segments of society, including low-income and minority communities. Greenlining further argues that UC has historically been ineffective at reaching diverse and disadvantaged communities.

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[14] PG&E, Opening Comments, p. 2.

[15] DRA, Opening Comments, p. 12 and p. 14.

Discussion

We believe it is appropriate to use ratepayer monies to fund the CICS. While we are mindful of the Commission's responsibility to ratepayers and of the growing number of programs they support financially, as we discussed above the benefits of these programs will flow back to ratepayers and inaction now will likely result in higher costs for ratepayers in the future.

Furthermore, today's decision does not approve funding for unfocused, exploratory academic research. The primary mission of the CICS is to develop technologies, mechanisms, and educational and workforce training programs that are practical, ready for implementation and will result in actual and cost-effective GHG reductions.

The causes and cures for climate change cannot be segregated on a sector by sector or industry by industry basis. Indeed, interconnection is the baseline premise on which various carbon reduction strategies are based. Accordingly we decline to adopt a rigid notion of ratepayer benefit as some parties propose. We agree with UC that the primary benefit to be gained as a result of the CICS is not revenue generated from intellectual property or licensing agreements but a stream of commercially deployable technologies that will reduce GHG emissions or help California adapt to the impacts of climate change.

Nonetheless, we agree that there should be a strong preference for research that is relevant to ratepayers. Accordingly, we require that Institute staff compile and attach an index to the Roadmap that will identify and rank areas of ratepayer benefit. Each potential area of research identified in the Roadmap will be evaluated for its ratepayer benefit, on a low, medium or high benefit index. While we recognize that this is a continuum, and not an exact measurement, it should serve as a guide to Institute staff as they develop short

term and long term strategic plans from which individual RFAs are developed. In this way the ratepayer benefit index will inform the entire grant administration process. The ratepayer benefit index, along with the Roadmap, will be submitted to the Governing Board and then to the Commission's Executive Director. After the Commission has had an opportunity to review the documents, the Institute Director must appear before the Commission, answer questions and receive feedback on the Roadmap and ratepayer benefit index.

We also agree with parties that ratepayers should not be the sole source of funding for the Institute. We see no need, however, to wait for collective state-wide action to establish the framework for the Institute and authorize funding. Put simply, given the urgency of the issue, the time for action is now. In order to leverage the initial funding and to spread the burden of the costs associated with funding the Institute, we include among the central duties of both the Institute Director and the executive committee of the Governing Board, the solicitation of additional funds from non-ratepayer sources. **What is the appropriate level of funding?**

Climate change is a global problem and the total costs of mitigating its impacts and adapting to its consequences will dwarf the $60 million per year expenditure proposed by UC. As noted by UC, the Stern Review on the Economics of Climate Change suggests that California alone will ultimately pay many times this amount to combat the worst effects of climate change. DRA and others argue that there is insufficient detail to properly assess the level of funding, but many parties agree with CSU's comments that the budget is

relatively modest given the scope of programs proposed.[16] USC suggests that funding levels be adjusted for inflation, "which would place the total 10 year budget on the order of $700 million."[17] Many parties emphasize the need to leverage additional funds, including federal and private monies.

The revised UC proposal provides additional detail about the proposed budget and the relative size of the need. Comments by several parties and the presentations at the workshop support the proposed budget. Professor John Weyant of Stanford University's Department of Management, Science and Engineering praised the collaborative nature of the UC proposal and the ability of academic research to mitigate risk and speed technologies and innovation to the market, as well as producing significant "spillover benefits."[18] Leah Fletcher of NRDC endorsed the proposed budget, citing concern about declining investment historically, and stressing the need for CICS funding not to replace but to complement existing funding.[19] Meeting the goals of California's Energy Action Plan (EAP) and AB 32 will be challenging. $60 million per year is merely a down-payment on meeting the commitments that have been made by the legislature. We do not suggest that this annual budget is adequate on its own, nor do we intend to shirk our responsibility to ratepayers to make sound investments for the future. Given the likely costs of inaction and the limited

[16] CSU, Opening Comments p. 13.

[17] USC, Opening Comments, p. 4.

[18] Statement of John Weyant, Stanford University, at December 12, 2007 CICS Workshop.

[19] Statement of Leah Fletcher, NRDC, at December 12, 2007 CICS Workshop.

resources currently available, we find that the proposed budget is appropriate and reasonable.

How should the costs be assessed?

In response to this question posed in the OIR, parties agree that the costs should be spread as equitably as possible across both electric and gas customers in the IOU service territories. The consumer and environmental groups and DRA argue that, if ratepayers must pay, it should be on an equal cents per therm or kWh basis, allocating costs based on the use of energy. Climate change, as discussed throughout this proceeding, is a global problem driven in large part by our consumption of energy, so energy use is a logical and equitable means of apportioning the costs of mitigation.

On the electricity side, the three largest IOUs argue for an equal percentage of revenue basis, similar to the methodology used for energy efficiency and distributed generation incentive programs. This would have the effect of slightly shifting costs onto residential and small commercial customers, who are proportionally the greater beneficiaries of those programs. PacifiCorp is a notable exception, agreeing that an equals cents per unit charge is the most equitable.[20]

On the gas side, PG&E, SCE, SDG&E and SoCaLGaS join SCGC in recommending that CICS costs "should be recovered from gas ratepayers through the natural gas public purpose surcharge," which would *de facto* exempt natural gas-fired electricity generators from bearing CICS costs. If, on the other hand, the Commission recovers costs from the base rate of the gas utilities, SCGC

[20] PacifiCorp, RC, p. 3.

argues that the gas-fired electricity generators should be explicitly exempted. As precedent for their exemption SCGC cites the precedent established by the Legislature in creating the natural gas public surcharge, the California Solar Initiative (CSI) and the Solar Water Heating and Efficiency Act of 2007.[21] They argue that if CICS costs are assigned to gas-fired electricity generation, California electricity consumers would potentially have to pay the direct costs on a cents per kilowatt (kWh) basis, the indirect costs of the equal cents per therm charge, and the higher price that "would be charged by non-gas-fired generators as a result of the wholesale spot price of electricity being inflated by the imposition of the new CICS charge on marginal gas-fired electricity generators."[22]

We agree that the costs of the Institute should be born by both electricity and gas customers, and that it should be on an "equal cents per unit" basis. We find that double-charging electricity consumers is an inequitable outcome and so gas used for electricity generation supplied to IOU customers should be exempted. The costs should be apportioned between gas and electric customers based on the percentage of total 2007 state revenues once electricity generation, wholesale sales to municipalities and DWR revenues are excluded. This will result in an approximately 70-30 split between electric and gas ratepayers respectively. We intend to hold a workshop to determine final cost allocations to determine revenue requirements for each regulated gas and electric utility on or about March 20, 2008. Parties will receive further notice regarding the agenda and date.

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[21] SCGC, Opening Comments, p. 4.

[22] SCGC, Opening Comments, p. 5.

Footnote continued on next page

AB 1X, enacted during the peak of the 2000-2001 electricity crisis, places additional restrictions on who will ultimately pay the costs of funding the Institute by freezing rates for residential ratepayers that consume less than 130% of baseline. To the extent that low-income and small users will be exempted, the costs will be borne by a smaller percentage of IOU customers. Utilities are hereby ordered to submit advice letters detailing the rate impacts of an equal cents per therm and an equal cents per kWh charge, with all the exemptions detailed above and compliant with the restrictions of AB1X, and apportioned according to the percentage of revenues from gas and electricity consumption will also be a topic for the planned workshop. The total budget for the Institute will be $600 million, with an annual budget of $60 million. Revenue collection should begin as early as feasible, consistent with standard practice and the Public Utilities Code.

3.2.2. Budget

How should the budget be allocated among the functions and tasks of the Institute?

Many parties commented on how the budget should be apportioned among the many tasks and priorities of the Institute. We are hesitant to be overly prescriptive with regards to the allocation of funds since the Institute's specific priorities should be established through the Roadmapping and strategic planning processes. Nonetheless general directives on how much money can be spent on each function, broadly defined, are necessary in order to ensure that ratepayers' needs are met and funds are used effectively.

First, ratepayer funds used by the Institute should be strictly segregated from other funds for accounting purposes. Any and all funds paid by California IOUs on behalf of their ratepayers should be kept in an interest bearing account so that both the principal deposits and any interest generated by those deposits is reserved for the purposes of the CICS. No ratepayer money, or the interest generated by it, may be used for non-CICS purposes.

Next, we have identified three "cost centers" or functions for the Institute:

1. Hub expenses – including administrative costs, staff salaries, strategic planning, and grant administration;
2. Money for grants and programmatic grants issued for the purpose of research, development, and commercialization of technology; and
3. Grants and programmatic grants for education and workforce training.

Parties' Comments

All parties agree that administrative expenses should be kept to a minimum. Since the Institute hub will be responsible for overseeing and coordinating the Roadmapping and strategic planning functions as well as developing RFAs and awarding grants, we include these, along with more traditional administrative costs as hub expenses. The parties also foresee relatively higher up-front costs for hub expenses, including staffing and leasing office space, and especially the initial Roadmapping exercise, which must be completed before work in the other areas can begin. This means that the first year hub expenses may exceed the hub expenses incurred in following years. Estimates of the total amount needed to run the hub range from a low of 5% of the total budget up to 15% of the total budget.

Discussion

Mission-based applied technological R&D as facilitated by the grant administration process, is both expensive and the primary purpose of the Institute. As such, a large majority of the funds provided to the Institute should support such projects. As the UC opening comments state:

> *As a matter of history, ratepayer-funded R&D reached its peak at about $200 million/year (in 2007 dollars) in 1991. Today, ratepayer funded R&D –at about $100 million/year- is half that. Thus, additional funding for energy R&D is consistent with past practice and is clearly necessary given California's commitment to addressing the problems of climate change.*[23]

Education and workforce development, as well as public outreach and dissemination of knowledge are not areas that currently receive significant targeted funding, although they have become more of a priority recently. UC suggests that adaptive management and social science research may sometimes be less costly than the technology R&D envisioned described above, but is nonetheless worthy of dedicated resources. Institute funding for education and workforce will have a unique and significant impact by targeting the areas of greatest need, as identified in the Roadmapping process, and by fully leveraging existing efforts.

The Governing Board will have the authority to shift resources between the applied R&D and the education functions based on the results of the Roadmapping process. Nonetheless, given the demonstrated need for applied R&D, the Commission finds it reasonable to establish the following requirements:

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[23] UC, OC, p. 16.

- Maximum of 10% of the total funding for Administration and Strategic Planning
- Minimum of 75% for competitively awarded grants for Applied R&D
- Minimum of 10% for Education and Workforce Training grants

This budget allocation allows the Governing Board and the Director to exercise discretion with the remaining 5% of the budget. Each cost center is discussed in more detail below.

Hub Expenses

The costs and expenses for activities that will occur within the Institute's hub or headquarters include the cost of leasing physical space, the salaries of the Institute's officers and staff, support and per diems for the Strategic Research Committee (SRC) and WTEC, grant administration, hosting conferences and workshops, and the cost of office supplies and computer equipment. The amount set aside for hub expenses should also cover all costs related to developing and updating the Roadmap and strategic planning. In the first year the Roadmapping process will require a considerable commitment from the subject-matter experts on the SRC and, therefore, may require compensation above and beyond the per diem they are otherwise permitted. Given the above, we expect that the start-up costs associated with setting up the Institute and developing the Roadmap will be front-loaded. Accordingly we permit using up to 15% of annual budget for hub expenses until the Roadmap is completed or June of 2009, whichever is sooner. For all years thereafter, hub expenses, which include administrative and central planning costs, should be capped at 9.4% of the annual budget so that total hub expenses over the ten year period do not exceed 10% of the total budget.

Applied R&D

In order to meet California's aggressive clean energy and GHG emission reduction goals, a broad array of technology must be developed, much of which is far from market ready and some of which is still in early conceptual or design stages. Conducting R&D requires considerable resources. Technologies and innovations from CICS funding that are developed into useful products and services that can benefit the public are also likely to yield the highest direct ratepayer benefit. As such, it is reasonable to require that the bulk of Institute funding be used for this purpose. The Commission expects a minimum of 75% of the annual budget to be spent on grants for applied research intended to support the goals of AB 32, the state's EAP,[24] and other policy directives. We expect the Institute to coordinate its technology transfer and commercialization efforts with the proposed ERRP, which, if approved, will consider applications for the use of emerging, commercially immature technologies in utility-scale renewable generation projects. The relatively small amount of Institute money available for commercialization is insufficient for utility-scale demonstration projects. Accordingly we require that the Institute staff and the Technology Transfer Subcommittee coordinate with the Commission's Energy Division where appropriate.

Workforce Training and Education

[24] EAP I was issued jointly on May 8, 2003, by the Commission, the CEC and the California Consumer Power and Conservation Financing Authority. EAP I was updated with the adoption of EAP II, as a joint policy plan of the Commission and the CEC in October, 2005. The EAP established a set of priorities, or loading order, to guide the state's energy policy. The loading order is energy efficiency, demand response, renewables, distributed generation and clean fossil-fuel.

The training and education of a new workforce are important components of California's strategy to mitigate the effects of climate change. Without a properly trained workforce of sufficient size to meet industry and government's needs, the California economy will not be able to meet its emission reduction goals. The Institute will develop an annual training and education agenda, focusing on those areas of need identified in the Roadmap. The Workforce Training and Education Committee (WTEC) will require sufficient resources to complete this mission. The Institute should also have the capability to support initiatives that would meet a broader need to develop new industries or re-tool existing industries to meet the State's sustainable energy needs. Such initiatives would present an opportunity to partner with industry and other stakeholders.

Recognizing the importance of workforce training, and outreach as well as the many institutions in California available to do this work, the Commission sets aside a minimum of 10% of the Institute budget for this purpose. For more discussion on the workforce training and education function, see section….below.

3.2.3. Equipment Purchases

UC proposed that part of the budget should be set aside for the purpose of acquiring equipment to support complex monitoring systems, servers and databases for measurement and informatics.

We decline to dedicate any ratepayer funds for this purpose. UC has not sufficiently demonstrated how this equipment is necessary support the Institute's other functions. While the Institute will certainly have to purchase or lease hardware and develop databases to construct the Roadmap and carry out its business, the Institute is primarily a grant-making body and not tasked with doing any original research. We therefore cannot support an equipment

expenditure as large as UC requests. However, we do not restrict the acquisition of equipment by recipients of grants who have identified in their grant application the need for specific equipment as a necessary component of their research project.

3.3. Governance and Organization

The Institute will have a Governing Board with an executive committee, an Institute Director, a managing director, necessary staff, SRC, and a WTEC.

The geographical location of the Institute's headquarters or hub, at which the Institute's staff maintains offices, shall be determined by the Governing Board through a competitive solicitation. Once established, the Governing Board will issue a Request for Proposals to which California-based entities interested in hosting the Institute hub may respond. Proposals should include detailed descriptions of how the hub would approach the Roadmapping and strategic planning processes, consistent with this decision. The Governing Board will then rank proposals (using peer review), from the potential hosts. Final selection of the hub should occur within three months of the first meeting of the Governing Board. The hub must be in California and should have a physical presence in both northern and southern California. For example, if the hub is established in northern California, a satellite office could be maintained at a southern California campus. Alternately, if the Institute funds programmatic or center grants, there could be an effort to encourage siting of such centers in both northern and southern California.

As stated above, funding for all Institute hub functions and expenses is limited to 10% of the total budget approved in today's decision. This shall include officer salaries, per diems and expenses for the SRC, leasing physical

space, hosting conferences, purchasing computers and office supplies, and maintaining its web portal.[25]

3.3.1. Governing Board

The Governing Board will be responsible for ensuring that the CICS does not stray from its mission or the requirements set out in this decision.

The comments presented numerous suggestions for the Institute's Governing Board. In general, the parties advocated diverse and broad representation including stakeholders from all different arenas including utilities/ratepayers, experts in the scientific and academic fields, the California university community, consumer groups, the CPUC and other energy-related state agencies such as the CEC and CARB, the UC system, the environmental community, and private industry.

We find that the Institute would benefit from a broad-based Governing Board with 21 seats, to be filled as follows: The President of the CPUC, or his/her designee; a second CPUC Commissioner, or his/her designee; the President of UC, or his/her designee; the Secretary of the California Environmental Protection Agency; or his/her designee, the Secretary of the California Department of Resources, or his/her designee; the Director of DRA, or his/her designee; a UC faculty member from a Northern California campus; a UC faculty member from Southern California campus; a CSU representative, a California Community Colleges representative; a representative from a Northern California private university; a representative from a Southern California private

[25] IEP suggested establishing a web portal for climate-related research and educational programs under the UC umbrella to direct researchers, students and the general public to their areas of interest (pp. 8-10).

university; a representative from a California-based national laboratory; a representative from California-based Investor-owned utilities; a representative from a California-based non-utility energy company; a representative of California's agricultural community, a member of the California venture capital and/or green technology community; a representative of California's minority, low-income, or underserved community; a member of the public appointed by the legislature, and a representative from an environmental organization.

In response to a consensus of opinion among the parties to this proceeding, no single organization or interest holds a majority of seats on the Governing Board. The Governing Board will be co-chaired by the President of the Commission, or his designee, and the President of UC, or his designee. The Governing Board shall have an Executive Committee of seven and shall also be co-chaired by the President of the Commission and the President of UC. The President of the Commission shall select three members the Governing Board to serve on the executive committee and the President of UC shall select the two remaining members from the Governing Board. Members of the Governing Board shall serve for staggered three year terms.[26]

All members of the Governing Board, including the executive committee and other subcommittees, will serve without compensation and shall be subject to the Governing Board conflict of interest policy, see Attachment B.

The Governing Board will select a location and host for the Institute's hub; appoint an Institute Director and a managing director; appoint members to the SRC; review and, if appropriate, approve the Roadmap; review and, if

[26] Once the Governing Board is established, the co-chairs will establish how the Governing Board should be staggered.

appropriate, approve the short term and long-term strategic plans; review, and if appropriate, approve the annual budget prepared by the Institute's staff;[27] and review and, if appropriate, approve aggregated lists of proposed grants compiled by the Institute's staff for each RFA cycle. The Governing Board shall have the power to establish any subcommittees necessary to perform its duties and responsibilities. At a minimum there will be a Technology Transfer Subcommittee and a Conflicts of Interest Subcommittee.

The Technology Transfer Subcommittee will be responsible for reviewing existing UC intellectual property and technology transfer policies and developing intellectual property and technology transfer policies and protocols specific to the Institute.

The Conflicts of Interest Subcommittee will be responsible for reviewing existing UC conflict of interest policies, and developing a conflict of interest protocols for CICS staff, the SRC, and the WTEC, to be submitted to the Governing Board as a whole for adoption.

3.3.2. Institute Director

The Governing Board's first order of business will be to conduct a national search for an Institute Director. The Institute Director should have expertise in climate change science, technology, or policy, and should be familiar with grant administration processes.

The Director shall be responsible for:

[27] Budget is subject to CPUC approval and once established by the CPUC it is then up to the Governing Board to approve an annual budget that is consistent with the funding provided by the CPUC and with the Strategic Roadmap.

1. Overseeing the requests for grant applications and managing the grant administration process, including the evaluation and approval of individual grants;
2. Organizing and supervising the peer review process;
3. Overseeing the Roadmapping process conducted by the SRC;
4. Assisting the Executive Committee solicit non-ratepayer funding for Institute programs and optimizing financial leverage opportunities for the Institute;
5. Supervising and causing the completion of all annual reporting and auditing processes;
6. Interfacing with the California Public Utilities Commission, the California Environmental Protection Agency, the CEC, the California Legislature, the Governor's Office, all other relevant local, state and federal government agencies and organizations, and the public; and,
7. Negotiating the terms of grant awards, intellectual property agreements, and agreements to secure additional, non-ratepayer funding.

The Institute Director will have authority, subject to the oversight of the Governing Board, to: organize, administer, and commit the resources of the Institute as necessary for the administrative function of the Institute's hub; make personnel decisions; and appoint and replace members of the SRC. The Institute Director may delegate any of his duties and responsibilities to the managing director.

The Institute Director shall appear before the Commission in a public meeting after submitting the Roadmap, and attached ratepayer benefit index, to the Commission for consideration. The Institute Director should be prepared to answer questions on the Roadmap and receive input from the Commissioners, especially regarding areas of potential ratepayer interest.

3.3.3. Strategic Research Committee

The SRC will be chosen by the Governing Board from a list of nominees compiled by Institute staff. The SRC shall have no more than 20 members, all residing within California or associated with an entity with a presence in California. The nominees should be experts from universities, research institutes, government, industry, public/private sectors and the environmental community. The nominees must have subject matter expertise in the fields of climate change science; green technology; electrical generation, transmission, and storage; energy efficiency; renewable generation; engineering; biotechnology; carbon capture and sequestration technology; and forestry and agriculture.

It will be the responsibility of the SRC to create the Roadmap from which the short-term and long-term strategic plans will be developed. As noted above, as part of the Roadmapping process, the SRC will also be responsible for conducting an inventory of current publicly funded research efforts in order to avoid redundancy and overlap with existing programs. Similarly the SRC should incorporate any Roadmapping work that has already been completed by CARB, PIER, and any other appropriate programs in order to promote consistency and coordination and to avoid redundancy and waste.

The SRC will be responsible for:

1. Developing an initial Climate Solutions Roadmap by February 7, 2009, and updating it on an annual basis.
2. Assisting the CICS officers develop short term and long term strategic plans based on the findings of the Climate Solutions Roadmap.
3. Reviewing grant proposals recommended by the peer review committee.

The SRC will also provide a forum for researchers and research managers to have an ongoing dialogue with industry regarding the direction, scope, and

relevance of the Institute's research and will be responsible for recommending potential mid-course corrections, in the event that it becomes necessary. The SRC will allow for a convergence of technical insight and market intelligence with academic expertise

The SRC will assist the Institute's staff develop and implement the grant administration process, review individual grant applications, and develop a short list of potential projects to be checked against the list prepared by the peer review panels and ultimately submitted to the Governing Board. It is expected that the SRC will be involved in all planning phases prior to the release of RFAs. The SRC should make its recommendations based on the priorities established in the short term and long term strategic plans and the scientific merit of each proposal as determined by a peer review panel. The final decision regarding which grant proposals are to be recommended to the Governing Board rests with the Institute Director.

Members of the SRC will serve at the pleasure of the co-chairs of the Governing Board. They will be reimbursed for all direct expenses incurred as a result of serving on SRC and will collect a small per diem. Members of the SRC are subject to the CICS conflict of interest policy statement. Members of the SRC may receive extra compensation for time spent working on the Roadmap.

3.4. The Roadmap

In its revised proposal, UC introduced the concept of creating a Roadmap to give direction to the work of the institute. As we understand the UC proposal, the Roadmapping process would provide a comprehensive and detailed analysis of all the areas and sectors in which GHG reductions can be achieved, how they can be achieved, and what technological, market, and policy barriers may need to be addressed. A far more precise description of Roadmapping should be

included with all proposals for hosting the Institute's hub that are submitted to the Governing Board.

3.4.1. Discussion

Strategic planning will be necessary for the Institute to effectively and cost-effectively administer grants in a targeted fashion. As discussed above, meeting the requirements of AB 32 will require rapid technological innovation as well as changes in consumer behavior. While CARB and the Climate Action Team are developing a scoping plan and analyzing a set of measures to meet the targets set in AB 32, the CICS will identify specific technology and workforce needs for implementing those measures. There is currently no centralized statewide directed R&D and training plan for how to get from present emissions levels to those established in AB 32, and no one institution with the mandate to evaluate and fund the most promising options for reducing GHG emissions.

In addition, many of the resources that could be brought to bear on this problem are not being used to their maximum potential, and many synergies and opportunities for collaboration are lost for lack of coordination.

Accordingly, the SRC, in consultation with the WTEC, shall develop a Climate Solutions Roadmap that will serve two purposes. First, it will help to prevent duplication of effort by serving as comprehensive inventory of current climate change related research and educational activity. Second, it will identify areas where GHG emissions can be reduced, all technological, economic, or policy barriers that may presently exist, and what additional research and educational activities are needed to overcome those barriers. The Roadmap should consider cost-effectiveness in its assessment of economic barriers. Once the Roadmap is complete, the SRC and the Institute's staff, in consultation with the Governing Board, should compile a ratepayer benefit index that will rank

areas of potential research for high, medium, or low ratepayer benefit. The Roadmap and ratepayer benefit index will be the basis for the long-term and short-term strategic plans from which RFAs will be developed. The SRC will update the Roadmap on an annual basis.

We note that there are currently Roadmapping efforts occurring at other institutions. Since some of these efforts likely overlap with the one described here, the SRC should first conduct an inventory of existing projects and incorporate their findings. We are not aware, however, of any effort identical to that envisioned for the Roadmap that has been completed at this time.

The coordinating role that the Roadmapping exercise could provide "would serve a valuable purpose by helping to clarify how existing programs relate to one another, and by identifying gaps in existing efforts to address important aspects of climate change."[28]

As stated above, all Institute hub proposals should include a detailed description of how the Roadmapping process would work, consistent with the general description above.

3.4.2. Short-Term and Long-Term Strategic Plans

Once the Roadmap has been completed, the SRC, in coordination with Institute staff, shall develop short-term and long-term strategic plans. The strategic plans should favor areas of research that will achieve the greatest GHG reductions at the lowest cost and to the greatest benefit of ratepayers as determined by the ratepayer benefit index to the Roadmap.

[28] UC, Opening Comments, p. 30.

The strategic plan documents will determine for which areas of research the Institute will develop the RFAs. The short term strategic plan should identify technologies that are 1-5 years away from being commercially deployable. The long term strategic plan should identify those areas in which the lowest cost GHG reductions can be accomplished to the greatest ratepayer development but that need technological innovation to be realized. The long term strategic plan should be focused on technologies that are 5-50 years away from being commercially deployable.

In addition, both the long-term and short-term strategic plans should identify how the Institute's WTEC initiatives complement and interact with the technological R&D function.

3.5. Grant Administration and the RFA Process

One of the central functions of the Climate Institute is issuing RFAs for grant applications, reviewing proposals, and awarding grants. The grant award process must be competitive in order to ensure that the most qualified individuals and institutions with the most viable ideas carry out ratepayer-funded research.

The California Institute for Regenerative Medicine provides a useful model in its Grants Administration Policy.[29] While we decline to elaborate in detail how such a process shall work for the CICS, the Institute's staff shall develop a Grant Administration Policy specific to the Institute and present it to

[29] CIRM Grants Administration Policy for Academic and Non-Profit Institutions, OAL Approved – Eff. 3/30/07, available at http://www.cirm.ca.gov/reg/pdf/reg100500_policy.pdf

the Governing Board for adoption in the bylaws prior to the initiation of the first RFA.

The Grant Administration Policy shall be consistent with the following:

1. Eligibility
   (a) To be eligible to apply for a CICS grant or programmatic grant an individual must be citizen of California or be employed full time by a California based entity.
   (b) Applicants for a CICS grant must submit a statement of qualifications demonstrating expertise in research, development, demonstration, deployment, or commercialization of technology relevant to a specific RFA. Specific qualification standards shall be adopted as part of the Grant Administration Policy.
   (c) Applicants for a CICS grant need not hold an academic position or be affiliated with a University or publicly funded research laboratory.
   (d) Applicants for a CICS programmatic grant must be employed by a California academic institution.
   (e) Collaborative teams including partnerships between relevant private and public sector entities should be encouraged.
   (f) Individuals residing outside of California and entities based outside of California may apply as part of a collaborative team that includes a California-based entity.
2. Application Submission

   Institute grant funding opportunities will be announced via an official solicitation, referred to here throughout as an RFA, on the CICS website. Each announcement or solicitation will specify the objectives and requirements that apply, and the review criteria that will be used to evaluate the merits of applications submitted in response to the announcement.
3. Application Review

   The Grant Administration Policy should specify appropriate procedures and steps in the application review process. The Policy should establish specific criteria for review of research grant applications and create a formal process for appeals of scientific review, and approval of funding notices.

4. The application review process shall include:
   (a) An objective scoring system for judging the scientific merit and viability of each application that will be used by both the SRC and peer review panels.
   (b) Anonymity of individual applicants and applicant entities, except as provided below.
   (c) A cutoff score to narrow the pool of applicants prior to compiling a shortlist of finalists.
   (d) An opportunity, if deemed necessary, for the SRC and peer review panels to interview finalists about details of each proposal prior to awarding a grant.
5. Sharing of Intellectual Property

   CICS grantees shall share intellectual property generated under a CICS grant according to CICS Intellectual Property and Technology Transfer protocols.
6. Preference for California Suppliers

   The CICS should expect the grantee to purchase from California suppliers, to the extent reasonably possible, the goods and services it uses in its CICS-supported research. The grantee must provide a clear and compelling explanation in its annual programmatic report for not purchasing more than 50 percent of its goods and services from California suppliers.
7. Confidentiality

   The Institute's grant administration policy should include confidentiality rules that, to the degree permitted by California law, allow applicants to designate commercially sensitive information as confidential.

3.5.1. Peer Review

Several parties strongly urged the Commission to ensure that grant awards be disbursed according to an open, competitive, peer-reviewed process. Many parties stated that peer review was the key to ensuring that individual grant awards generated the highest quality work. Both CCST and CSU urged

the Commission to keep the process open by having peer review by recognized experts in the various disciplines. USC agrees that a peer review process would help ensure that project funds to the "most qualified" institutions. [OC, p. 3.] Morrison Foerster proposes that a peer review board should be established to review the grant proposals and assist with monitoring and evaluation.[30]

We agree that impartial peer review is an important function of any grant-making body. Peer review ensures that grants are awarded and administered in a fair and objective manner. We are not convinced, however, that a permanent peer review board, as Morrison and Foerster proposes would have the broad expertise required to effectively evaluate highly technical grant applications submitted in response to an RFA. Instead, ad hoc peer review panels should be assembled for each RFA. The expertise of each panel can then be tailored to match the subject area that is the focus of the RFA. If for example, the Institute issues an RFA for a certain kind of electricity storage technology, the peer review panel should be composed of experts with knowledge as specific to that kind of electricity storage technology as possible.

We require that Institute staff, in consultation with the Governing Board, develop a complete peer review process for the grant administration processes. All grant applications must be reviewed prior to being put on a short-list or approved for funding.

The grant administration peer review process should be consistent with the following requirements:

[30] OC, pp. 9-10.

(1) Peer review groups should be comprised of experts who are unaffiliated with any of the applicants, to the degree possible. This means that peer reviewers can be selected from institutions outside of California and outside the United States.

(2) Peer reviewers should not know the identity or institutional affiliation of an applicant.

(3) Peer reviewers may not be compensated for their work.

(4) The peer review process should be structured in so that it does not unduly delay awards for grants. Accordingly, each peer review panel will have a designated chairperson that who will set a schedule that the rest of the peer review panel will be bound by.

3.6. Workforce Training and Education Program

Workforce training and education are essential elements of California's strategy to mitigate the effects of climate change. A properly trained and educated workforce will help California, its businesses, industries, and IOUs meet their emission reduction goals.

As California leads the nation in the transformation towards a greener economy, there will be greater demand for professionals, technicians, and laborers at all levels that have the skills and training to participate in a carbon-constrained economy. California's economic growth will be dependent on filling the "workforce pipeline" with personnel to meet new needs as they are identified. This will require enhanced training at all levels of the work force, including professionals, managers, engineers, and skilled laborers .[31]

For example, presently IOUs are facing shortages of qualified applicants for skilled technical positions. Forty-two percent of PG&E's workforce will be

[31] D.07-10-032.

retirement-eligible in the next five years.[32] As utilities look to replace retiring technicians and workers they will struggle to fill those positions at all and will be forced to look beyond California's borders. This should not be necessary. With the proper training and education, those jobs can be filled by Californians and graduates of California's educational system.

3.6.1. Goals

The Institute should strive to ensure that the benefits of a sustainable energy future are available to all Californians. The WTEC will develop an annual workforce training and education agenda, focusing on ratepayer benefit, cost-effectiveness, and reaching underserved communities. The goals of WTEC of the CICS are three-fold. These goals include:

1. Filling the green-workforce pipeline: Meeting California's green workforce needs by providing job training to Californians, especially those from low-income, minority, and disadvantaged communities, and fostering the next generation of researchers and professionals in areas critical to sustainability.

   Careful planning, investment, and a strong partnership between employees, government, workforce development organizations, and the community are essential to creating a robust program that meets the needs of the labor market and gets low-income and minority communities into the green workforce pipeline.

   Additionally, the Program should reach into those same underserved and underrepresented communities with opportunities to draw in workers who haven't yet been introduced to the current formal education system like CSU/CC and the K-12 school systems. Many programs like Regional Occupation Program exist and the WTEC should coordinate with existing programs where possible.

[32] *Ibid*

2. Developing RFAs and awarding grants for workforce training and education programs. These grants are related to, but clearly distinct from, grants that will be focused on technology R&D. Accordingly, the WTEC will be tasked with reviewing grant applications for all workforce and education programs and projects. Although CSU/CC are well positioned to undertake educational outreach and worker training programs, with longstanding partnerships between them to conduct workforce development, all sectors of the community including education, utility, engineering, environmental and labor, are requested to submit job training and education grant applications
3. Behavioral Modification – While it should not be its primary focus, the WTEC should develop strategies for achieving GHG reductions through behavioral modification. In consultation with the SRC, the WTEC should identify those areas of the Roadmap where individual behavior is the biggest impediment to achieving GHG reductions and address them by educating Californians on their personal impact on climate change and fostering awareness of ways to reduce that impact.

3.6.2. Workforce Training and Education Committee

The WTEC should be comprised of recognized experts from the education, utility, engineering, environmental and labor communities, and should include representation from CSU/CC systems.

The Institute's senior staff will conduct a California-wide search to compile a list of WTEC candidates for approval by the Governing Board. The WTEC will include no more than 12 subject matter experts selected from CSU/CC systems, California's IOUs, government, industry, public/private sectors and the environmental and education communities. WTEC members should have subject matter expertise in education, climate change science, economics, workforce development, engineering and any other matter relevant to the work of the WTEC.

Members of the WTEC will serve at the pleasure of the Governing Board. They will be reimbursed for all expenses incurred as a result of serving on the

WTEC and will collect a small per diem. Members of the WTEC are subject to the CICS conflict of interest policy statement.

The WTEC will be responsible for implementing the goals described above. The WTEC will have the following duties and responsibilities:

1. Coordinate with the SRC in the development of the Roadmap and identify areas where education and workforce training can achieve the greatest GHG reductions at the lowest cost.
2. Identify those areas of climate change related education and workforce training that will be of greatest benefit to California IOUs and their ratepayers
3. Identify critical future workforce training needs and target resources to meet that need through the CSU/CC system
4. Develop and propose a "sustainable energy" curriculum for K-12, community colleges, and higher education.
5. Target underserved and disadvantaged communities, including low-income groups and geographic regions, minorities, prison and ex-convict populations, and at-risk youth.

The WTEC will then develop an Education and Workforce Development Strategic Plan (EWDSP) that will be submitted to the Governing Board and the Commission. The EWDSP will identify areas of need and recommend policies and programs to address those needs. The WTEC will also advise the Institute's staff on all workforce development and education matters.

3.7. Oversight and Accountability

In the OIR we asked parties to comment on certain aspects of oversight and accountability including the role the CPUC should play in overseeing Institute programs, CPUC control of expenditures to maximize ratepayer benefits, and performance measures or guidelines that may be applied to funding.

Oversight of the CICS shall be performed by the Governing Board and the Commission. In response to parties' comments we have taken several accountability measures that will safeguard ratepayers interests and ensure ongoing oversight. First of all the Governing Board has several members that are accountable to the ratepayers, including two Commissioners, the Director of DRA, and a representative from an IOU. Second, and most importantly, the Commission maintains continuing oversight authority. This decision is not a contract and does not obligate the Commission in any way going forward. The terms and requirements of the grant of ratepayer funds can be modified by any subsequent Commission decision.

Finally, we require that the Institute perform periodic performance reviews and submit to financial audits. Through these reports the Institute must demonstrate that it is accomplishing the goals set forth for it, and it must demonstrate that it is spending ratepayer money efficiently and prudently as directed by the Commission. We are convinced of the need for effective external evaluation, as well as internal reporting and regular approval by the CPUC, but we do not wish to create redundant and burdensome requirements that impose the Commission's authority on the day to day operations of the Institute. A comprehensive biennial performance review would likely meet our minimum requirements in this regard, but given the magnitude of the ratepayer funding and the wide interest in the activities of the Institute, we determine that annual reporting is warranted to provide a rigorous assessment of the CICS in both regards. We require that every two years, beginning in Year 2 (e.g., Years 2, 4, 6, 8 and 10), an external evaluator such as CCST perform a comprehensive performance review, and that every other year (e.g., Years 1, 3, 5, 7 and 9) a more limited annual financial and progress report is submitted. Both reports must be

submitted by the Institute Director to the Governing Board and to the Commission's executive director for posting on the public website.

4. Annual Financial and Progress Report

DRA and PG&E both emphasize the need for annual reports. DRA suggests that annual reports include information on revenues and expenditures, the status of funded projects, and projected activities for the next year. PG&E recommends that two annual reports be required: a financial report and a programmatic report. We agree that annual reports must include both financial and programmatic information, but we do not see the need for two separate reports.

Accordingly, we hereby order the Institute Director to present an annual report to the Governing Board within 30 days of the close of the fiscal year of the Institute. The annual report will serve as an internal assessment by the Institute of its own performance. The annual report shall be posted to the Institute website following approval by the Governing Board. The annual report will describe the activities of the Institute during the course of the year including but not limited to RFAs issued, the grant applications received, the grants awarded, conferences organized, and the accomplishments achieved by the Institute and its grantees. The annual report must also include an interim internal financial audit that presents a financial summary of expenditures and funds received. The Institute shall maintain detailed financial records under generally accepted accounting principles, and these records shall be maintained for at least six years. Upon request by the Commission, the Institute Director shall appear in person at public meetings of the Commission to answer questions on the annual report.

In addition to the annual report, we require that the Director cause the completion of a financial audit every other year, with the first occurring at the

end of the second fiscal year of operations by the Institute, or December of 2010. The audit report and detailed programmatic information must be made available to the external performance evaluator on a biennial basis.

4.1. Biennial External Performance Review

Several parties commented that the CICS should be subject to a periodic external performance review, with most suggesting a biennial review period. We support this recommendation and therefore require that an external evaluator conduct a biennial performance review.

The performance review will include an overall assessment of the Institute's effectiveness in reaching the long-term and short term strategic plans approved by the Governing Board as well as an assessment of meeting the goals outlined in this decision. In opening comments, CSU offered several examples of such metrics such as "number of students educated, number of publications, number of dissemination activities (e.g., presentations given, websites accessed), response time to stakeholder requests, patents filed, and new products transferred to the commercial market." CSU also recommended that performance metrics include information on funding leveraged by recipient institutions.[33]

UC's opening comments referenced a National Academy of Sciences (NAS) report on performance metrics that may provide other useful indicators. The NAS report, "Thinking Strategically: The Appropriate Use of Metrics for the Climate Change Science Program," provides a detailed discussion of the possible metrics for use in Government R&D programs like this. The generic pool of

[33] CSU, OC, pp. 17-18.

metrics for science and technology includes Process Metrics like cycle time, Input Metrics like expenditures by program or time frame, and Output Metrics like the number of publications issuedor patents filed.[34] This report is an excellent starting point, but while we agree that specific metrics will be essential to providing a thorough performance assessment, we decline to adopt a specific set of metrics in this decision. In consultation with CCST and other stakeholders, the Institute Director and the Governing Board shall determine which exact metrics should be included. CSU's and other parties' recommendations should be given serious consideration. However, we do require that additional metrics on the success of the CICS and grantees in reaching diverse communities and preparing Californians for the workforce demands of our evolving green technology industries be included.

The majority of parties supported using CCST as the external performance evaluator. We adopt this recommendation.

The performance review shall be presented to the Governing Board and, as with the annual reviews and audits, be delivered to the Commission's Executive Director.

5. Intellectual Property

Parties all expressed interest in the disposition of Intellectual Property rights, or revenues generated there from, arising from the proposed work of the Institute. Consumer groups, utilities and, to some extent, environmental groups indicated that the benefits from patents or other intellectual property should flow directly to ratepayers in the form of royalties. PG&E requests that a "clear

[34] "Thinking Strategically: The Appropriate Use of Metrics for the Climate Change

Footnote continued on next page

path" provide benefits for electric and gas utility customers from their investment in the Institute's programs, suggesting incorporation of "'benefit-sharing'" mechanisms that provide free access to and licensing of technologies, information and research results generated by the Institute, as well as royalties in the revenues and value generated by patents and licenses granted by the Institute to third parties."[35]

Of primary concern in this matter is the effect of the federal Bayh-Dole Act, officially titled the University and Small Business Patent Procedures Act ("Bayh Dole"). [35 U.S.C. § 200-212.] The academic and research institutions strongly recommend that the practices of the Institute be fully compatible with the provisions of the federal Bayh-Dole Act" because "failure to comply with the Bayh-Dole Act would assure that CICS funds could not be used to leverage any federal funding and would thus significantly reduce the effectiveness of the Institute." [Stanford, OC, p. 11.] CCST for example, recommends "that to the fullest extent possible, the state's IP policies reflect the federal Bayh-Dole Act, and that royalty income earned by universities from profitable technologies … be reinvested in ongoing research." [CCST, OC p. 6.] USC urges that technology transfer "be a decentralized activity assumed by each participating institution to accelerate the impact of CICS' research."[36]

CSU argues that the benefits of the Institute will be largely non-financial and suggests that Bayh-Dole be used as the basis for any policies related to revenue sharing from profitable technologies. [OC p. 22.] DRA suggests that it

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Science Program," (National Academy Press, 2005), Appendix C.

[35] PG&E, OC, p. 2.

may be possible to structure a sharing mechanism that both ensures ratepayers a return on their investment and addresses the universities' concerns regarding consistency with Bayh-Dole.

The California Institute for Regenerative Medicine specifically provides for revenue sharing in its governing regulations, which require grantee organizations to pay the State 25 % of net revenues above a threshold amount "unless such action violates any federal law." PIER's standard agreement with UC requires royalty payments of 10 percent of net revenues to the Energy Commission. [DRA, RC pp. 8-9.] SDG&E and SoCalGas offered joint comments that suggests a secondary aim of the Board "should be to create additional incentives for research institutions to competently and efficiently patent inventions by introducing the potential for the Board to confiscate ownership" of an unpatented invention and to retain "march-in rights" to prevent abuse of monopoly power by patent holders benefiting from CICS funded research. [SDG&E, OC, p. 21.] Finally, they argue that "[s]ince United States IP law does not provide for an automated devolution of IP profits or licensing by virtue of providing funding contributions, the Board ought to be granted a non-exclusive license" for inventions coming out of the CICS program. [SDG&E, OC, p. 21.]

Caltech expresses the concern, echoed in written comments and during the December workshop, that "[t]he addition of a new layer of regulation on this process [the Bayh-Dole Act] would create significant, sometimes insurmountable, disincentives for the robust research partnerships that redound so greatly to California's benefit at present." [Caltech, OC pp. 6-7] UC's

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[36] USC, RC, p. 2.

presentation at the workshop indicated that the financial benefits from any inventions developed as a result of Institute grants were likely minimal and would be far overshadowed by more qualitative economic, while also pointing out the potential difficulty in then qualifying for federal funds under Bayh-Dole.[37] In general, the UC presentation made a strong case for complying with Bayh-Dole. Stanford's presentation at the workshop also supported the UC proposal, particularly in the context of indirect costs and accounting procedures used for federal funding.

We recognize that Bayh-Dole's public purpose is generally consistent with the mission of the CICS. Furthermore, it appears that there is sufficient flexibility around the elements of Bayh-Dole that the programmatic objectives of CICS can be fully met without being at cross-purposes. It would be imprudent to discourage participation by other universities and researchers by prematurely restricting the open framework established in Bayh-Dole. We are convinced that leveraging federal funds is crucial to the success of the Institute and to California's ability to meet policy goals expressed in AB 32 and the State EAP. Nonetheless, it will be necessary, when bringing in federal funds, to create grant agreements that are in the interest of California and its ratepayers. One possible approach to the question of revenue sharing might be to require that grantees reinvest a portion of their net licensing revenues in research related to climate solutions, though other solutions are possible as well. It is too early to tell what form such agreements may take.

[37] Comments of Wendy Streitz, pp. 171-175.

Accordingly, we require that the Governing Committee establish a Technology Transfer Subcommittee responsible for (1) reviewing the existing policies and practices pertaining to intellectual property, inventions, and technology transfer of the hub's host institution or entity, (2) identifying any barriers to technology transfer the host institution's policies present and bringing them to the attention of the Executive Committee, (3) if necessary, developing intellectual property and technology transfer policies and protocols specific to the Institute, in consultation with stakeholders, (4) advising the Institute and Director regarding intellectual property and technology transfer matters, and (5) reviewing all proposed agreements for additional non-ratepayer funding for the purpose of identifying potential technology transfer issues. Because these are complex issues, requiring specialized knowledge and experience, the Technology Transfer Subcommittee will be expected to establish a means of seeking input from professionals with relevant expertise.

Prior to the establishment of intellectual property and technology transfer policies and protocols specific to the Institute, however, all grant agreements shall be consistent with the framework established by Bayh-Dole.

6. Comments on Proposed Decision

The proposed decision of President Peevey in this matter was mailed to the parties in accordance with Section 311 of the Public Utilities Code and comments were allowed under Rule 14.3 of the Commission's Rules of Practice and Procedure. Comments were filed on _____, and reply comments were filed on_____ by _____.

7. Assignment of Proceeding

Michael R. Peevey is the assigned Commissioner and Carol A. Brown is the assigned Administrative Law Judge in this proceeding.

Findings of Fact

1. This mission of the CICS is :

   - To administer grants to facilitate mission-oriented, applied and directed research that results in practical technological solutions and policy recommendations likely to reduce GHG emissions or otherwise mitigate the impacts of climate change in California;
   - To speed the transfer, deployment, and commercialization of technologies that have the potential to reduce GHG emissions or otherwise mitigate the impacts of climate change in California;
   - To disseminate climate change related knowledge and skills to California's students and workforce in order to promote the kinds of behavior and foster the kinds of technological expertise that can help California achieve its GHG reduction goals.

2. It is necessary for the CICS to first develop a Climate Solutions Roadmap (Roadmap) as described in this decision because the Roadmap will identify those areas of research and technological innovation that are most likely to achieve the greatest GHG reductions.

3. The Roadmap and strategic plan processes discussed below are to be structured in a way to maximize ratepayer benefits and cost-effectiveness.

4. Stabilizing GHG emissions will require an economic investment in this Institute on the scale established in this decision.

5. The mission of the CICS is consistent with the purpose and findings contained in AB 32 wherein the Legislature found that "global warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California."

6. We find that it is appropriate and necessary to direct ratepayer funding for the establishment of CICS and the activities described in this decision.

7. We find that the proposed budget of $60 million a year over ten years is appropriate and reasonable for the CICS investment, especially if it is leveraged with additional funds from private and public sources.

8. Energy use is a logical and equitable means of apportioning the costs of CICS and allocating the costs on an equal cents per therm or kWh basis among all CPUC jurisdictional California electric and gas utilities is fair and reasonable. However, to avoid any duplication, gas-fired electricity generators are explicitly exempt from assessment for gas CICS costs for gas purchases.

9. We find it reasonable to specify that administrative costs, including strategic planning and grant administration should be kept to a minimum, although we acknowledge that there will be higher up-front costs for the initial administrative function costs that must be incurred before work in other areas can begin. Except for the anticipated first-year costs, where we will allow using up to 15% of the yearly CICS budget, we anticipate that administrative costs will take up to a maximum of 10% of the yearly total funding for the Institute.

10. Mission-based applied technological R&D as facilitated by the grant administration process is the primary purpose of the Institute and we expect that it will require up to a minimum of 75% of the CICS budget.

11. We acknowledge that the Institute will need to allocate some percentage of its R&D budget to technology transfer and commercialization functions, but these costs should not exceed 5% of the total yearly budget for CICS.

12. Grants and programs for education and workforce training are a third critical area of projected costs for the Institute and we anticipate that it will take up to a minimum of 10% of the total yearly CICS budget for these expenditures.

13. We find it reasonable to allow the governing Board and the Institute Executive Director to exercise some discretion in the percentage allocations

between the administrative and education/training budget, but not with the 75% of budget allocated strictly to the R&D budget.

14. It is unreasonable to allow the CICS to spend or allocate the ratepayer funds authorized in this decision for the purchase of research equipment or information infrastructure for the central hub of the Institute beyond the 10% allotted for program administration. Grant recipients may spend grant monies on equipment if the need for the equipment was identified in the grant application.

15. We find it reasonable to establish that the Institute will have a Governing Board with an Executive Committee, an Institute Executive Director, a Managing Director, staff, a Strategic Research Committee (SRC) and Workforce Training and Education Committee (WTEC).

16. It is reasonable for the CICS Governing Board to select the geographical location of the Institute's headquarters, or hub, competitively chosen, following procedures set forth by the Governing Board at its first meeting, provided that the headquarters shall be physically located in California. The Institute is also to have a presence in both northern and southern California.

17. The core functions of the Institute's hub shall include developing a grant-making process; issuing RFA; awarding individual grants; overseeing the Road-mapping process conducted by the SRC; managing intellectual property; disseminating information to the public; and reporting to the Commission, the Governing Board and the public.

18. We find that the CICS would benefit from a broad-based Governing Board with 21 seats to be filled as set forth in the decision, Attachment C. No single organization or interest may hold a majority of seats on the Governing Board.

19. The Governing Board shall be co-chaired by the President of the Commission and the President of UC, or their respective designees. Other specifics relating to the Governing Board, including its duties, are set forth in the decision, and in particular in Attachment A, Articles II, IV, V and VI.

20. We find it reasonable to require all members of the Governing Board to be subject to the conflict of interest policy, Attachment B.

21. The Governing Board will conduct a national search for an Institute Executive Director who has responsibilities as set forth in Attachment A, Article VII, Section 4.

22. The SRC shall be chosen by the Governing Board and will have no more than 20 members, all residing in California, or connected with an entity with a presence in California, with subject-matter expertise in a designated field related to climate change issues. The duties and responsibilities of the SRC are set forth in Attachment A, Article VIII.

23. Once the Climate Solutions Roadmap is completed, the SRC, in coordination with Institute staff, shall develop short-term and long-term strategic plans for research that will achieve the greatest GHG reductions at the lowest cost and to the greatest benefit of ratepayers.

24. The purpose of the strategic plans is to develop target RFAs for the short-term and long-term research goals, as well as identify how the WTEC initiatives complement and interact with the technological research and development functions.

25. Once the Institute issues RFAs, it must ensure a competitive process for the review and awarding of grants. The awarding of grants shall be consistent with the policy set forth in this decision.

26. We find it reasonable to direct the Institute staff, in consultation with the Governing Board, to develop a peer review process through which all grant applications will be reviewed prior to being approved for funding. The peer review process shall be consistent with the requirements set forth in this decision.

27. We find that a properly trained and educated workforce will help California, and its businesses, industries and utilities meet their emission reduction goals.

28. We find that there is a need for enhanced training at all levels of the workforce, including high professional level professionals, technical experts, managers and K-12 teachers.

29. The WTEC will oversee and make recommendations for all workforce and education programs and projects.

30. It is reasonable for the WTEC to be comprised of recognized experts form the education, utility, environment and labor sectors, as well as representation from the CSU and Community College systems.

31. The goals of the WETC component of the CICS are set forth in this decision, but include recognition that careful planning, investment and a strong partnership between employees, government, workforce development organizations and the community are essential to creating a robust training and workforce preparation program.

32. The primary function of the WETC program is to meet the needs of the labor market and get low-income and minority communities into the green workforce pipeline.

33. The duties and responsibilities of the WTEC are set forth in the decision.

34. The Governing Board shall oversee the Institute. To this end, it is reasonable for the Governing Board to prepare or cause to be prepared an internal and an external report, one every other year. Every two years, beginning in year two, an external evaluator shall perform a comprehensive performance review, and every other year, beginning in year one of the Institute's operation, shall prepare a more limited annual financial and progress report. These reports shall be distributed as set forth in the conclusions and ordering paragraphs below.

35. It is also reasonable for the Institute Executive Director to submit an annual report to the Governing Board within 30 days of the close of the fiscal year of the Institute. Institute staff should prepare the annual report internally and the report should be posted to the CICS website following approval by the Governing Board. The Institute Executive Director is to appear before the Commission to answer questions on the annual report.

36. The annual report is to describe the activities of the Institute during the course of the year, including the RFAs issued, grant applications received, grants awarded, conferences organized, and the accomplishments achieved by the Institute and its grantees.

37. The annual report is to include an interim internal audit that presents a financial summary of expenditures and funds received. The CICS is to maintain detailed financial records under generally accepted accounting principles and these records shall be maintained for at least six years.

38. In addition to the annual report, we find that it is reasonable to order the Institute Executive Director to support an external audit, every other year, with the first occurring at the end of the second fiscal year of operation of the Institute,

but no later than 2010. This audit and detailed programmatic information must be made available to the external performance evaluator on a biennial basis.

39. It is reasonable to direct that an external evaluator conduct a biennial performance review that includes an overall assessment of the Institute's effectiveness in reaching the long-term and short-term strategic plans approved by the Governing Board, as well as descriptions of specific performance metrics, to be determined by the Institute Executive Director and the Governing Board. However, we will require that metrics on the success of the CICS and grantees in reaching diverse communities and preparing Californians for the workforce demands of our evolving green technology industries be included.

40. We do not determine, at this time, what outside entity should conduct the performance reviews, but do suggest that the Governing Board give consideration to the recommendations that CCST perform such a review. The performance review shall be distributed as set forth in the conclusions and ordering paragraphs below.

41. It is reasonable to require that the Governing Board establish a Technology Transfer Subcommittee responsible for taking specific steps outlined in the decision to establish intellectual property and technology transfer policies and protocols specific to the Institute.

42. It is a reasonable finding that until the Institute establishes intellectual property and technology transfer policies and protocols specific to the Institute, all grant agreements shall be consistent with the framework established by Bayh-Dole.

Conclusions of Law

1. We find that it is in the public interest and the ratepayer interest to establish the CICS to accelerate applied R&D of practical and commercially

viable technologies that will reduce GHG emissions and allow California to adapt to the impacts of climate change.

2. A total of $60 million a year over ten years of ratepayer funding should be allocated to the CICS, with direction to the Institute to use this money as leverage to secure additional funds from public and private sources.

3. The costs of CICS should be allocated among CPUC jurisdictional gas and electric utilities on an equal cents per therm or kWh basis. To avoid any duplication, gas-fired electricity generators are explicitly exempt from assessment for CICS costs for gas purchases.

4. The costs for CICS should be apportioned between gas and electric customers based on the percentage of total 2007 state revenues once electricity generation, wholesale sales to municipalities and DWR revenues are excluded, resulting in an approximately 70-30 split between electric and gas ratepayers respectively.

5. Utilities should comply with funding restrictions imposed by AB 1X in assessing the additional costs for CICS from residential ratepayers.

6. The CICS should strictly segregate the ratepayer monies invested in CICS from other funds and keep them in an interest-bearing account so that all principal and interest generated by the funds are reserved for the purposes of CICS.

7. The Institute should allocate the $60 million funding for each year of the Institute's operation among the Institute's activities as follows: except for the initial start-up year, administrative costs should not exceed 10%; funds for the workforce and education training program should not fall below 10%; technology transfer and commercialization functions should not exceed 5%; technological R&D through the grant administration process should not fall

below 75%; no money is authorized for the purchase of equipment beyond the 10% allotted for hub administration. As specified in the decision, grant recipients may purchase equipment. The Governing Board and Institute Executive Director may exercise discretion in the percentage allocation among the administrative, technology transfer and workforce training and education funds, but not with the 75% of the budget allocated strictly for R&D activities.

8. The Institute should have a Governing Board with an executive committee, an Institute Director, a Managing Director, staff, a SRC and a WTEC, and the particulars of these positions are set forth in Attachment A, the Charter for CICS, and the composition of the Governing Board is set forth in Attachment C.

9. All members of the Governing Board are subject to the conflict of interest policy set forth in Attachment B.

10. The Institute should have a physical headquarters, or hub, physically located in California that shall perform the following core functions: developing a grant-making process; issuing RFA; awarding individual grants; overseeing the Road-mapping process conducted by the SRC; managing intellectual property; disseminating information to the public; and reporting to the Commission, the Governing Board and the public. The Institute is also to have a physical presence in both northern and southern California. The CICS Governing Board should select the geographical location of the Institute's headquarters or hub competitively, following the procedures set forth by the Governing Board.

11. The Institute shall maintain a web portal.

12. Creation of the Climate Solutions Roadmap is the first and primary function of the SRC, to be followed by developing short-term and long-term goals for the Institute to inform RFAs; drafting a competitive process for solicitation of grants, reviewing grant applications, and, following a peer review,

recommending grant recipients to the Institute Executive Director for presentation to the Governing Board.

13. The WTEC should plan and invest in a robust program to accomplish a properly trained and educated workforce that will help California, and its businesses, industries and utilities meet their emission reduction goals. .

14. The Governing Board shall oversee the Institute. To this end, we direct the Governing Board to prepare, or cause to be prepared, an internal and an external report, one every other year. Every two years, beginning in year two, an external evaluator shall perform a comprehensive performance review, and every other year, beginning in year one of the Institute's operation shall prepare a more limited annual financial and progress report.

15. Both reports should be submitted to the Institute Executive Director, to the Governing Board, and to the Executive Director of the Commission for posting on the public website.

16. The Institute Executive Director should submit an annual report to the Governing Board within 30 days of the close of the fiscal year of the Institute. The Institute staff is to prepare the annual report internally and the report should be posted to the CICS website following approval by the Governing Board. The Institute Executive Director shall appear before the Commission to answer questions on the annual report.

17. The annual report should describe the activities of the Institute during the course of the year, including the RFAs issued, grant applications received, grants awarded, conferences organized, and the accomplishments achieved by the Institute and its grantees.

18. The annual report is to include an interim internal audit that presents a financial summary of expenditures and funds received. The CICS is to maintain

detailed financial records under generally accepted accounting principles and these records shall be maintained for at least six years.

19. In addition to the annual report, the Institute Executive Director shall support an external audit, every other year, with the first occurring at the end of the second fiscal year of operation of the Institute, but no later than 2010. This audit and detailed programmatic information must be made available to the external performance evaluator on a biennial basis.

20. An external evaluator should conduct a biennial performance review that includes an overall assessment of the Institute's effectiveness in reaching the long-term and short-term strategic plans approved by the Governing Board, as well as descriptions of specific performance metrics, to be determined by the Institute Executive Director and the Governing Board. However, we will require that metrics on the success of the CICS and grantees in reaching diverse communities and preparing Californians for the workforce demands of our evolving green technology industries be included.

21. The performance review shall be presented to the Governing Board and be delivered to the Commission's Executive Director.

22. The Governing Board is to establish a Technology Transfer Subcommittee responsible for taking specific steps outlined in the decision to establish intellectual property and technology transfer policies and protocols specific to the Institute, and until then, all grant agreements shall be consistent with the framework established by Bayh-Dole.

23. This decision should be effective immediately so that the process of establishing the CICS can begin forthwith.

O R D E R

IT IS ORDERED that:

1. We establish a California Institute for Climate Solutions (CICS) to accelerate applied research and development (R&D) of practical and commercially viable technologies that will reduce greenhouse gas (GHG) emissions and allow California to adapt to impacts of climate change.

2. The Charter of the CICS, Attachment A to this decision, sets forth the particulars of the Institute, including its authority, mission, the constitution of the Governing Board and its functions and authority, meeting requirements, subcommittees, officers and duties and committees.

3. As a condition of establishing the CICS, the co-chairs of the Executive Committee of the Governing Board, the President of the California Public Utilities Commission (Commission) and the President of the University of California (UC), are directed to meet within 90 days of the date of this decision, to initiate the steps, as set forth in the decision and consistent with Attachments A, B and C, to create the Executive Committee and the Governing Board and to follow through on nominations to the Strategic Research Committee (SRC) and the Workforce Training and Education Committee (WTEC) so the Climate Solutions Roadmap can be developed and the Institute can follow through on its mission. The assigned Commissioner or assigned Administrative Law Judge may modify the timeline set forth in this ordering paragraph.

4. The California investor-owned electric and gas utilities shall collect the $60 million per year, for the ten years authorized by this decision, from all electric and gas ratepayers, exempting gas-fired electricity generators from the gas charge, and consistent with funding restrictions imposed by Assembly Bill 1X.

5. A workshop with input from all CPUC regulated gas and electric utilities shall be held on or about March 27, 2008, but no later than April 11, 2008, to determine each of their additional authorized electric public purpose program revenue requirements to implement the program described in this decision.

6. The utilities shall allocate these additional revenues on an equal cents per kWh or cents per Therm basis.

7. Within 30 days of the date of this workshop the utilities shall begin collecting these additional revenues from customers. The utilities shall each file an advice letter within 10 days of the date of the workshop to modify tariffs to implement this decision. The revised tariffs shall become effective no later than 60 days after the effective date of this decision subject to Energy Division determining that they are in compliance with this order.

8. Once the utilities collect ratepayer funds for CICS, these funds are to be kept in a separate memorandum account, the CICS Memorandum Account, until the funds are delivered to the Institute.

9. Payments from the CICS Memorandum Account will be on a uniform monthly basis, so that the annual allocation for each utility is paid in full by March 31st of each year of the program commencing in 2009.

10. Once CICS receives ratepayer funds, CICS is to keep the

11. Once CICS receives ratepayer funds, CICS is to strictly segregated the ratepayer monies invested in CICS from other funds, and keep them in an interest-bearing account so that all principal and interest generated by the funds are reserved for the purposes of CICS. CICS funds may be kept in a UC short-term investment pool account, provided that the requirements above are met, but no principal or interest is to be disbursed to any other purpose than CICS.

12. The $60 million funding for each year of the Institute's operation should be allotted among the Institute's activities as follows: except for the initial start-up year, administrative costs should not exceed 10%; funds for the workforce and education training program should not fall below 10%; technology transfer and commercialization functions should not exceed 5%; technological R&D through the grant administration process should not fall below 75% of the budget; no money is authorized for the purchase of research equipment or information infrastructure for the central hub of the Institute beyond the 10% allocated for program administration. Grant recipients may spend grant money on equipment if the need for the equipment was identified in their grant application. The Governing Board and Institute Executive Director may exercise discretion in the percentage allocation among the administrative, technology transfer and workforce training and education funds, but not with not spending 75% on R&D activities.

13. The Institute will have a physical headquarters, or hub, located in California that shall perform the core functions of the Institute. In addition to the physical location of the hub, the Institute is to also have a presence in the other California region, be it northern or southern California, different from the hub.

14. The Institute shall maintain a web portal

15. Creation of the Climate Solutions Roadmap is the first and primary function of the SRC, and pursuant to our directive in Ordering Paragraph 3, that is to be the focus of the Governing Board as soon as it is constituted according to the prescriptions set forth in this decision and Appendices A, B and C.

16. The WTEC shall plan and invest in a robust program to properly train and educate a workforce that will help California, and its businesses, industries and utilities meet their emission reduction goals.

17. The Governing Board shall ensure that an internal and an external report be prepared, one every other year. Every two years, beginning in year two, an external evaluator shall perform a comprehensive performance review, and every other year, beginning in year one of the Institute's operation, shall prepare a more limited annual financial and progress report.

18. Both audit reports are to be delivered to the Institute Executive Director, to the Governing Board, and to the Exeuctive Director of the Commission for posting on the public website.

19. The Institute Executive Director shall submit an annual report, with the particulars as directed in this decision, to the Governing Board within 30 days of the close of the fiscal year of the Institute. The Institute Staff shall prepare the annual report internally and the report shall be posted to the CICS website following approval by the Governing Board. The Institute Execute Director shall appear before the Commission to answer questions on the annual report.

20. The annual report is to include an interim internal audit that presents a financial summary of expenditures and funds received. The CICS shall maintain detailed financial records under generally accepted accounting principles and these records shall be maintained for at least six years.

21. In addition to the annual report, the Institute Executive Director shall support an external audit, every other year, with the first occurring at the end of the second fiscal year of operation of the Institute, but no later than 2010. This audit and detailed programmatic information must be made available to the external performance evaluator on a biennial basis.

22. An external evaluator shall conduct a biennial performance review that includes an overall assessment of the Institute's effectiveness in reaching the long-term and short-term strategic plans approved by the Governing Board, as

well as descriptions of specific performance metrics, to be determined by the Institute Executive Director and the Governing Board. However, we will require that metrics on the success of the CICS and grantees in reaching diverse communities and preparing Californians for the workforce demands of our evolving green technology industries be included.

23. The performance review shall be presented to the Governing Board and be delivered to the Commission's Executive Director.

24. The Governing Board shall establish a Technology Transfer Subcommittee responsible for taking specific steps outlined in the decision to establish intellectual property and technology transfer policies and protocols specific to the Institute, and until then, all grant agreements shall be consistent with the framework established by Bayh-Dole.

25. Rulemaking 07-09-008 is closed.

This order is effective today.

Dated _____, at San Francisco, California.

INFORMATION REGARDING SERVICE

I have provided notification of filing to the electronic mail addresses on the attached service list.

Upon confirmation of this document's acceptance for filing, I will cause a Notice of Availability of the filed document to be served upon the service list to this proceeding by U.S. mail. The service list I will use to serve the Notice of Availability of the filed document is current as of today's date.

Dated February 11, 2008, at San Francisco, California.

/s/ ROSCELLA GONZALEZ
Roscella Gonzalez